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PRELIMINARY REPORT OF THE U. S. DEPARTMENT OF AGRICULTURE

ON

POSSIBLE SOLUTIONS FOR AGRICULTURAL PROBLEMS

OF

THE GREAT PLAINS

The suggestions and recommendations in this report are confined to operations of the Department of Agriculture and its joint operations with cooperating State and local agencies and individuals under existing agreements. No attempt is here made to specify what any other federal agency, any state government, or any local unit of government should do. Those are things that must be decided by the specific agencies concerned.

Background

Droughts have been a feature of the Great Plains for centuries. The present drought is the fourth that has occurred since the area was settled by farmers in the 1880's. The droughts of 1890-95 and 1931-38 were so severe and so persistent as to cause widespread depopulation. The latter drought brought major dust storms, produced by wind erosion, and earned the region the name "Dust Bowl."

Short droughts, of one year or less duration, are common to the Plains. They are often economically disastrous to some individuals. But they seldom cause widespread damage to the land. Long droughts, of two years or more duration, don't come often but when they do come they are likely to ruin many farmers or ranchers and result in severe damage to much of the land. "Safe farming" in the area apparently must be based on the assumption that each short drought may be the beginning of a long drought.

Pioneers in the area have stated that dust storms occurred even before any cultivation. So, it may not be feasible to prevent all dust from blowing, but it should be possible to prevent the widespread damage from wind erosion. Also, the Great Plains is subject to intense rainstorms. Damage from water erosion during these storms may be severe locally.

More cover on the land is a simple answer to the problems of wind and water erosion. But getting and maintaining proper vegetative cover on eroding fields is not so simple. It must be done by people. Hence, we may say that the problem of alleviating the damages from recurring droughts is a problem of, by, and for the people--mainly the people living on these Plains.

(This preliminary report is a brief summary of program review materials assembled and proposals for consideration developed during April and May 1955 by a U. S. Department of Agriculture committee on land use problems in the Great Plains area.)

Individual, Local, State, and Federal Responsibilities

It is generally recognized that individuals must accept the major responsibility for the proper management and protection of the natural resources over which they have control. But severe wind erosion may permanently lower the potential productive capacity of the land. It may decrease the tax base of local and State governments. Furthermore, dust storms cause human suffering and create health hazards. They may increase the cost of transportation, storage of goods and adversely affect many economic interests. And critical problems are created in other parts of the country when depopulation of a "dust bowl" occurs, as happened in the 1930's. Hence, the problems of wind erosion and dust storms are also a responsibility of local, State and Federal governments.

The role that each level of government should play in helping individuals solve these acute problems will vary from community to community, and State to State. Obviously, the lead must be taken by local governments--counties, soil conservation districts, grazing districts, and other local governmental units--because these local units of government are closer to the people affected and in a better position to understand and solve the specific local problems. Nevertheless, each State government must share a major part of the responsibility, particularly for two reasons: (1) the revenues and well-being of the States are directly affected, and (2) most local governmental units exist and operate under State laws and hence may have their operations limited or expanded by State legislation or appropriations.

Inventory of Basic Soil and Water Resources

The first step in working out a permanent solution for the problems should be to get an accurate inventory of all soil and water resources, for these are the basic ingredients involved, aside from the people. In two specific fields adequate information is not now available for all areas: (1) soil surveys and land classification, and (2) ground water resources. The Department suggests that high priority be given to getting specific information on these points--county by county and farm by farm.

Soil surveys and land classification

Of the 135 million acres in the Administrative Area discussed, soil surveys suitable for land classification have been completed on about 39 million acres (about one-third of the agricultural land of the area). Estimates taken from the soil and land classification surveys of these 39 million acres indicate that about 29 percent of the land is suitable for continuous dry-land cropping. About half of the area suitable for cropping is smooth, deep, hard land and the other half somewhat sandy land. An additional 4 percent of the land is irrigated or is alluvial land along streams which is suitable for cropping.

About 13 percent of the land falls in an intermediate class between that suitable for cultivation and that suited only for grazing. Some of this land can be used for cultivation when it occurs in association with good cropland, but it needs special management. The remainder of the 13 percent should be kept in permanent vegetation. This leaves about 54 percent of the land best suited for grazing because it's either too shallow, too sandy, too rough, or too heavy to be suited for cultivation.

Unfortunately, some 6 to 8 million acres of land not suited for cultivation have been plowed up in the area over the last 30 years. This acreage constitutes one of the major problems of the area. It is land on which wheat or cotton crops have failed year after year and make satisfactory yields only during the most favorable years.

In order that this land unsuitable for cultivation can be converted to grassland on a selective basis it is necessary that a soil survey and land classification for each locality be completed at the earliest feasible date. At the present rate of progress completion will take 20 to 25 years. Additional funds and personnel might permit completion in 3 years.

In the meantime we should explore the possibilities of using reconnaissance surveys to obtain more readily in some areas land classification information needed.

In order for any land classification system to operate as a foundation for a long-range program it must be agreed upon and accepted by local people and authorities.

Survey of ground water resources

Irrigation water from reservoirs is or can be made available to a few areas in the Great Plains. Pump irrigation from groundwater storage also is feasible on a limited acreage. The extent of potential development from well irrigation cannot be estimated until more complete surveys of underground water supplies are available. Such surveys should have high priority in the program. The surveys would also indicate those areas where ground water withdrawal exceeds the replenishment rate and help guide future developments in those areas.

Research

Considerable emphasis has been given to research on Plains problems during the last 20 years but additional research is needed on many specific problems.

The first need is to inventory and summarize the research results which are now available and to make full use of them in guiding the programs which are undertaken.

Additional research needs include:

1. Determining the incidence and severity of serious drought in different areas of the Plains, and relating drought incidence to crop yields to land classes and different farming practices.

2. The physical aspects of erosion control, moisture conservation and fertility maintenance.

3. Additional grassland research to develop productive grasses and legumes, and improved methods for establishing stands.

4. Analyzing investments, costs and income potentials of different sizes and types of farms adapted to different areas of the Plains. This work is essential to a sound adjustment, credit and farm enlargement program in all areas. The size and type of farm necessary for farm business survival and community stability should be analyzed for all areas.

5. Determining the most effective ways of surviving drought when sizes and types of farms are adapted to the conditions found in each area.

6. Improvement of crop insurance, tax, tenure and credit programs and on financial, feed and livestock reserves.

7. Zoning, easements, restrictive covenants, grazing and soil conservation districts in guiding desirable use of land.

8. Use and regulation of scarce water supplies.

Education

Obviously, many individuals and some Federal, State and local government agencies are not making use of all the information available about better land use and farming methods in this area. Some of this is due to the fact, pointed out above, that all research information has not been properly analyzed and summarized in a readily usable form. Some is due to the fact that certain individuals or groups think that proper land use might conflict with their financial interests. A great part of this failure to use proper practices, however, is because everyone has not been adequately informed about the best available practices and the most profitable practices, in the long run. In other words, we need to intensify our educational efforts in this area.

The principal educational agency of the Department of Agriculture is the Cooperative Extension Service maintained by the Department and State Agricultural Colleges. The key men in the Extension Services are, of course, the county agents because these are the men most directly in contact with the people of the various communities affected. However, the county extension staffs in these counties are below average in numbers. As of April 1955 there was an average of only 1.2 county agents and assistants per county, with somewhat over half of the counties involved having home demonstration agents.

This relatively low staffing pattern is related to the low tax bases characteristic of the area. In the cooperative extension system county extension staffs are partly financed from county funds and the number of staff workers employed are determined jointly with county governing officials. In areas of low tax bases and difficulties in tax collection in periods of adversity it is difficult to develop an adequate extension staff to deal with the very problems that in turn make adequate staffing difficult.

Although the Department of Agriculture has available to it a relatively small amount of funds appropriated for extension work which can be allocated to States on the basis of special needs, these moneys have to be matched by State and/or local funds. All but 2 of the 7 States in this particular area are now

recipients of some of these special needs funds. Apparently some additional Federal money, both under the formula distribution and under special needs allocation, will be available to these States in fiscal year 1956. However, insofar as the specific counties are concerned the necessity for some county contribution will continue to be a limiting factor.

There is need to strengthen the educational efforts, both extensively and intensively, with individual farm families by the educational arm of the Department and by independent organizations, public schools, churches, civic organizations, farm and business groups.

Soil and Water Conservation Measures

Flexible cropping systems are universally recommended to take advantage of the weather cycles. Stubble mulching is recommended as a universal practice to retain residues on the land. Strip cropping is essential in most areas. Contouring and level terracing are recommended as additional water conservation measures.

More emphasis is placed on stubble mulch tillage and proper management of crop residues on the sandy row cropland than on hard land. Contour strip cropping or stripping in narrow field strips is recommended for sandy lands.

Emergency tillage may check wind erosion on some types of soil if done properly and at the right time. But it can provide only temporary relief. It should be used only in emergencies, and then just as a stop-gap until plant cover can be grown. Emergency cover crops, such as sorghums and millet, should be planted on all blowing land as soon as there is enough moisture to start their growth.

On the grazing lands, management includes retention of sufficient cover to maintain vigorous growth and to protect the soil. Also involved is sufficient water and salting places to permit even grazing and such practices as contouring, waterspreading and reseeding, where needed. As a precaution against a drought, a 2-year feed supply reserve should be maintained continually.

Lands not suited for cultivation, which are now in cultivation, should be converted to permanent grass as soon as practical. Lands now in grass should not be plowed for cultivation unless they have been determined suitable for continuous cultivation.

The conversion of cropland unsuited for continuous cultivation involves some 6 to 8 million acres in the area. This will involve enlarging farm units and changing the type of farming, all of which will include complex financial undertakings.

Technical Assistance on Conservation Problems

Many conservation problems involve techniques in planning or application that farmers are not equipped to do. Hence, there is a need for an accelerated program of on-site technical guidance. The present rate of planning and application will take some 50 years for completion. It is believed that this rate

could be stepped up to complete the job in 8 to 10 years with additional funds.

The Soil Conservation Service works mainly through locally organized soil conservation districts in furnishing technical assistance to farmers and ranchers. There are 195 soil conservation districts within this area, organized and operating under the laws of their respective States. About 84,000 farmers and ranchers (nearly 60 percent of those in the area)^{1/} are cooperating with these districts. Nearly 58,000 of these farmers and ranchers (more than 40 percent) have developed a basic conservation plan and are applying its recommendations to their fields and grazing lands as rapidly as their resources will permit.

Soil and water conservation practices and measures applied to the land in districts in the area continued to increase year after year from 1938 until 1952. Since 1952, the rate of application has slowed down. Reports from supervisors of districts indicates that the reason for the slowdown is largely lack of farmer finances and credit.

Cost-sharing on conservation practices

It is the policy of the ACP to share with farmers the cost of installing the most enduring and most needed practices attainable under the conditions that exist on a farm. This offer is made only to those farmers who request assistance prior to the installation of the practices and certify that cost-shares are needed to carry out the practices.

Additional emphasis should be placed in the cost-sharing program on those practices that tend to bring about the land use adjustments needed for a long-range program.

The ACP should continue cost-sharing on such practices as emergency tillage which have shorter time benefits only when essential to meeting the needs which develop under severe, adverse weather conditions. These practices should be retained in a standby position for immediate use where and when needed.

If a long-range program is developed under which farmers or ranchers might adopt practices requiring more than one year for installation, additional legislative authority would be needed by ACPS to permit the forward commitment of funds. Because of annual appropriations ACPS is presently limited to annual commitments.

Conservation Loans

Under legislation passed in 1954, Federal credit through the Farmers Home Administration is available both to individual owners or operators of farms and ranches and to associations of farmers for development of recommended soil conservation practices and water resources. Where private credit is not available under favorable terms, these loans will permit many farmers and ranchers to meet their conservation credit needs.

^{1/} 1950 census for the area selected for administrative study shows, in the 166 county area, 135,495,600 acres and 141,603 farms.

Credit

Credit becomes an important factor in bringing about the needed land use adjustments and installation of desirable conservation practices during long drought periods. Relatively few farmers and ranchers have sufficient resources of their own to put into effect any major shifts in type of operations and land use which may be recommended as a part of a desirable long-range program. In many areas considerable land should be diverted from crops to permanent grass. Some existing grasslands will need to be improved. Other soil-conserving practices will need to be established. Any expansion of grass and hay production will require additional livestock. The investments required in making such adjustments will call for credit in most instances. There will also be need for credit to enable many operators in severely stricken drought areas to carry on until moisture again becomes available.

The guiding principles of the Department of Agriculture in its credit operations for this area are:

1. Private and cooperative credit sources should be encouraged to carry the maximum amount possible of the credit load required by farmers and ranchers and to adopt credit policies that will encourage proper land use.
2. Government loans should be limited to operators established in the area, who will obtain their livelihood from the farm or ranch and who have established a good reputation in dealing with creditors in the past.
3. Loans from the government should be limited to those operators who have agreed to long-range plans for conducting their operations in line with acceptable practices (land classification) and land management that have been generally approved for the area.
4. Real estate loans made by the Government should not exceed the long-time agricultural value of the units on which the loans are made.
5. Production type credit extended by the government should be limited to that which the applicant can repay, based upon a forecast of his farm income, and the repayment period should not extend beyond the useful life of the security offered for the loans.
6. In justifiable cases deferments of principal and interest should be granted on either real estate or production type loans for at least two years.

Credit facilities available from the Federal Government come mainly from three sources: (1) The Farm Credit Administration, (2) The Farmers Home Administration, and (3) The Rural Electrification Administration.

Farm Credit Administration

The Farm Credit Administration operates mainly through local National Farm Loan Associations and Production Credit Associations which have been organized in the various communities, usually on a county-wide basis.

Officers and directors of PCA's and NFLA's can assist other local leaders and agencies in developing sound land-use patterns and types of farm organization for their local areas. If these Farm Credit units are fully informed on the land use objectives and become convinced of their soundness, they are likely to adopt credit policies and operations that will encourage farmers and ranchers to adjust to the desired patterns. Officers and directors of these units, especially of PCA's and NFLA's, are most likely to become "sold" on the program and to cooperate with it through credit policies if they have a part in developing the local aspects.

Credit Facilities Available Through the Farmers Home Administration

Adequate authorities and funds will be available under the Soil and Water Conservation loan program to finance the installation of domestic water supplies and irrigation facilities on individual farms and ranches in the area as well as to finance any permanent soil conservation measures to be adopted. These loans may be advanced in amounts not exceeding \$25,000 for individual borrowers and \$250,000 to groups or associations.

The authorities contained in Titles I and II of the Bankhead-Jones Farm Tenant Act will be available in the area for supplying an adequate system of credit to owners and operators of family-size farms to develop such units into efficient farm management units and to provide a satisfactory line of credit to stock, equip and operate such units.

The Title I loans under this statute to purchase, develop or enlarge family-size farms are limited to those farms having a value after development not in excess of the average value of family-size farms in the county.

The production type loans under Title II of the statute provide a line of credit up to \$10,000 with repayment periods not in excess of seven years. Under each of these loans, funds may be advanced for the refinancing of existing debts. Statutory authority exists for making deferment on principal and interest on these loans for two full crop years.

Due to the prolonged drought in the Southern Great Plains Area, many farmers and ranchers are now in very bad financial condition. The loss of income has caused their debts to pyramid out of line with their debt paying capacity even under normal conditions.

The Secretary of Agriculture has authority under Section 22 of the Bankhead-Jones Farm Tenant Act to administer a program of voluntary debt adjustment between farm debtors and their creditors. This authority should be exercised as a means of implementing a long-range program.

The Rural Electrification Administration

The Rural Electrification Administration has 81 electric borrowers and 27 telephone borrowers whose service areas lie within the region. The 81 electric borrowers have been loaned a total of approximately \$245 million. They are providing electric service to over 161,000 farms and 70,000 other rural

consumers. Twenty-seven telephone borrowers have received loans totaling approximately \$19 million to provide telephone service to about 34,000 subscribers.

As of January 1, 1955, the electric borrowers had repaid about \$27 million of principal, leaving a principal balance outstanding of about \$190 million. As of the same date the telephone borrowers had repaid \$65,000 of principal and had a principal balance outstanding of almost \$10 million.

There appear to be two principal means by which the credit facilities of REA can be a constructive contribution to the Department's programs for this area:

1. Loans by REA under Section 4 of the Rural Electrification Act for the purpose of heavying up borrowers' systems to serve larger rural loads, including irrigation loads.

2. Loans by REA to the electric borrowers in the area to be reloaned to their consumers at 4 percent interest for the purchase of electric appliances and equipment. The authority for these loans is contained in Section 5 of the Rural Electrification Act. These consumers' facilities loans should be of material assistance to farmers making a conversion from grain to livestock farming by supplying credit to buy and install electric stock water systems and livestock feed and forage processing equipment.

Economic Stabilization Measures

Economic instability may be an important factor in determining the use and treatment of the land in this region. During early years of settlement farmers and ranchers had to gamble on both the weather and the prices received for their produce. When extreme drought and very low prices happened to coincide during the early 1930's there was a great exodus from the region. The abandoned land left by those who went broke and could obtain no more credit contributed greatly to the severity and prolongation of the "dust bowl."

Since that time many stabilizing influences have been introduced into the economy. Among the more important influences affecting this area have been the "price support," "acreage allotment," "marketing quota," and "crop insurance" programs of the Federal Government, administered by the Department of Agriculture. The price support, acreage allotment, and marketing quota programs are administered by the Commodity Stabilization Service. The crop insurance program is administered by the Federal Crop Insurance Corporation.

Commodity stabilization

A study of CSS programs, and the manner in which they operate, indicates the improbability that program revisions involving more restrictive requirements would significantly contribute to the reduction of the dust bowl hazard. The two factors which generally have been most responsible for the plowing up of the plains area are (1) moisture and (2) price (with or without price support). The two big plow ups have occurred during periods of above normal rainfall.

The following revisions illustrate the kinds of changes which might be considered in CSS programs if requested and strongly supported by local producers.

1. Acreage allotments conditioned upon land use based on land classification.

A revision in acreage allotments of this type would constitute a significant change in the price support and acreage control philosophy. It would materially reinforce governmental authority in land management and planning operations of individual farms and might be interpreted as a long step in the direction of farmer regimentation by economic coercion.

2. As intermediary steps certain revisions in acreage allotment and price support programs could be made. Listed below are some of the kinds of changes that might be made.

a. Amend the allotment procedure so as to eliminate acreage credit for any acreage seeded in excess of the allotment, in the establishment of future wheat acreage allotments. If such a procedure were adopted, it probably would have to be made effective nationally. This would tend to "freeze" acreage allotments on present wheat farms and areas, and limit somewhat, as long as acreage allotments and marketing quotas remain in effect, the extent to which adjustments could be made in wheat acreage allotments. Under the present law it is necessary to give primary consideration to acreage seeded in determining state, county and farm allotments.

If this revision is adopted, legislation may be necessary.

b. Increase of the current limitation (two percent of the acreage allotment otherwise established) on adjustment of county allotments to reflect "Promotion of Soil Conserving Practices."

This revision of the allotment procedure may be proposed as a means of providing wider latitude in determining county wheat acreage allotments. The present limitation of two percent for adjustments based on this factor is an administrative determination. Experience for wheat has shown that this kind of adjustment has not been widely used for the purpose intended--chiefly because it has been practically impossible for State Committees to establish adequate criteria.

Another provision permits county committees to adjust farm base wheat acreages by as much as 20 percent, either up or down, in recognition of type of soil and topography.

c. Adoption of certain wind erosion prevention practices and land uses as a condition of eligibility for price support. It may be suggested that price support eligibility should be conditioned upon the adoption of certain practices and land uses designed to assist in holding the land. These could include those available under the Agricultural Conservation Program as well as other practices considered helpful in preventing wind erosion. A revision of this kind would necessitate additional legislation and practical operation might require that the provision be uniformly applied over the nation rather than applied only to

the dust bowl area. This revision would also constitute a significant change in price support and acreage control philosophy and might appear to represent further regimentation of farmers.

d. Relaxation in designated areas of the requirement that 90 percent of the wheat acreage allotment must be planted in order to maintain wheat "base acreage." Modification or elimination of the "90 percent requirement" in designated areas may be a means of discouraging plantings in these areas made solely for the purpose of maintaining wheat acreage history. Actually under present regulations, if it is considered too dry to seed wheat in a particular year, county committees may eliminate that year in determining the wheat base acreage for the farm. However, a producer does not have this assurance at seeding time under present county office procedure. Elimination of this requirement in designated areas as proposed, contemplates crediting producers with acreage history equal to the allotment; it thus has a tendency to "freeze" allotments. While this is an objectionable feature, there are other ways in which allotments may be adjusted if desirable.

Crop insurance

Where crop insurance is available, it can be a financial bulwark to farmers of the Great Plains in times of emergency. It will be available in 1956 in 88 of the 166 counties in the area.

Crop insurance provides a business method by which farmers can make the good years take care of the bad. Successful insurance, however, requires many people sharing the risks through premium payments on a continuing basis. It cannot operate as insurance if it takes on liability after "the house is on fire."

It has frequently been suggested that the farmers should be required to carry crop insurance where it is available in order to be eligible to participate in the Government's investment in price support measures. This emergency situation in the Great Plains may merit serious consideration being given to such a requirement in order that the farmers may be provided a real incentive to use the practical measures available to prevent such emergency situations as the one that has currently developed.

It is the policy of the Federal Crop Insurance Corporation that crop insurance should not be made available on land that is unsuited to long-time production of the insured crop. There is need for closer cooperation of other agencies with FCIC to assure that its actuarial maps reflect proper land use. It is also necessary for the agencies whose responsibility it is to provide such guidance to farmers to take a more positive position on proper land use so that the classifications of the insurance program can be established and publicized as having the judgment of qualified experts behind them.

It is also the policy of the Corporation to insure only crops grown on land on which good farming practices were used. Its contracts provide that losses due to poor farming practices are not insured. This provision offers a good opportunity for other agencies to work with FCIC so that its influence can be brought to bear directly on getting farmers to adopt the best farming practices for

meeting the particular conservation and production problems. Again, there is need for a positive and united stand by the experts in this field to enable the Corporation to back its determinations regarding what is insurable with expert opinion that will not falter if court action should become necessary to defend the Corporation's designation of a loss being due to a poor farming practice and not to an insurable cause.

It may be that future developments will permit operation of crop insurance programs in some counties where this now appears impossible if proper land use and farming practices can be established that will reduce the risk to the point where a more attractive but sound rate can be developed.

Farmer cooperatives

Farmer cooperatives can assist in improving production and marketing practices under both existing and changing patterns of land use.

Through its research, service, and educational programs Farmer Cooperative Service can be helpful to farmers in adjusting cooperative operations so they may use land resources most effectively. The Service also can be useful to farmers in the area in helping them adapt existing cooperatives or in setting up new ones to achieve greater flexibility in farm operations.

Land Use Adjustments

The problem of diverting the 6 to 8 million acres of cropland that are unsuited for cultivation to grassland is largely a problem of voluntary action or land use regulation, hence it must be handled mainly by State and local governments and individual landowners. There are certain things, however, that the Department of Agriculture may do to induce such diversion.

Cost-sharing incentive payments, for example, might be increased and spread over a period of 3 to 5 years while grass is being established.

If such a program were developed, it would be extremely important to consider companion measures, such as restrictive covenants and surrender of eligibility for allotments, loans and crop insurance, that would prevent or discourage plow-up in favorable years.



